

What is claimed is:

1. A CDMA base transceiver system, the CDMA base transceiver system adapted to perform wireless communications through the use of a CDMA method, comprising:

an FPGA that processes a signal at a chip rate through the use of FPGA program data;

a DSP that processes a signal at a symbol rate through the use of DSP program data; and

program data setting means that sets the FPGA program data used by the FPGA and the DSP program data used by the DSP.

2. A CDMA base transceiver system according to claim 1, comprising:

memory connection means through the use of that there is connected to an external memory, whereby

the program data setting means sets the program data by reading the program data stored in the external memory connected through the use of the memory connection means.

3. A CDMA base transceiver system according to claim 1, wherein

the program data setting means sets the program data corresponding to a type of communication method that is selected from among a plurality of communication methods that includes two or more types of communication methods of a W-CDMA/TDD method, a W-CDMA/FDD method, and a multi-carrier CDMA method; and

the FPGA and DSP each processes a signal through the use of said communication method.

4. A CDMA base transceiver system according to claim 2, wherein
the program data setting means sets the program data
corresponding to a type of communication method that is selected
from among a plurality of communication methods that includes
two or more types of communication methods of a W-CDMA/TDD
method, a W-CDMA/FDD method, and a multi-carrier CDMA method;
and

the FPGA and DSP each processes a signal through the use
of said communication method.

5. A CDMA base transceiver system, the CDMA base transceiver
system adapted to perform wireless communications through the
use of a CDMA method, comprising:

a base band part that is constructed using an FPGA that
processes a signal through the use of FPGA program data and a
DSP that processes a signal through the use of DSP program data;
and

program data changing means that changes the FPGA program
data used by the FPGA and the DSP program data used by the DSP
to program data corresponding to a different type of
communication method.

6. A CDMA base transceiver system according to claim 5,
comprising:

clock means that supplies a chip-rate clock having a
frequency corresponding to the chip rate of each of a plurality
of the communication methods changeable by the program data
changing means and that supplies a symbol-rate clock having a
frequency corresponding to the symbol rate of each of a

plurality of the communication methods.

7. A CDMA base transceiver system according to claim 6, wherein

the clock means oscillates a clock signal having a frequency that has the value of a common multiple of the frequency corresponding to the chip rate of the W-CDMA method and the frequency corresponding to the chip rate of the multi-carrier CDMA method, thereby supplying a chip-rate clock and a symbol-rate clock.

8. A program data setting method for setting program data for a CDMA base transceiver system that is equipped with a base band part that is constructed using an FPGA processing a signal through the use of FPGA program data and a DSP processing a signal through the use of DSP program data to thereby perform wireless communications through the use of a CDMA method, wherein

the program data is set in correspondence with an instruction input from the user or in correspondence with an instruction input from an external apparatus.

9. A base transceiver system providing system comprising:

base transceiver system information storage means that stores, regarding a plurality of base transceiver systems each having set therein program data corresponding to a communication system selected from among a plurality of communication systems and thereby performing wireless communications through the use of the communication method, information concerning whether each of the base transceiver systems is being utilized by a communication service company;

search means that according to the stored contents of the

base transceiver system information storage means makes search for an empty one of the base transceiver systems;

register means that, according to a request made from the communication service company wanting to utilize the base transceiver system searched by the search means, changes the stored contents of the base transceiver system information storage means in regard to the base transceiver system to those wherein this base transceiver system is being utilized; and

program data setting means that sets the program data corresponding to the communication method the communication service company utilizes to the base transceiver system.

10. A base transceiver system providing system according to claim 9, wherein

the base transceiver system information storage means further stores therein information regarding the installing place of each base transceiver system and information regarding the cell area of each base transceiver system; and

the providing system comprises display means that makes a display/output of information and display control means that causes the installing place and cell area of the base transceiver system to be displayed on a map by the display means according to the stored contents of the base transceiver system information storage means.

11. A base transceiver system providing system according to claim 9, comprising:

program data storage means that stores program data and that is connected to the base transceiver system via the

relevant lines, whereby

the program data setting means transmits, according to the fact that a change has occurred due to the operation of the register means, the program data stored in the program data storage means to the base transceiver system via the relevant lines to thereby set the program data to the base transceiver system.

12. A base transceiver system providing system according to claim 10, comprising:

program data storage means that stores program data and that is connected to the base transceiver system via the relevant lines, whereby

the program data setting means transmits, according to the fact that a change has occurred due to the operation of the register means, the program data stored in the program data storage means to the base transceiver system via the relevant lines to thereby set the program data to the base transceiver system.

13. A CDMA base transceiver system according to claim 2, wherein

a base band part is constructed using the FPGA and DSP;
FPGA configuration data is used as the FPGA program data;
DSP firmware is used as the DSP program data;

the FPGA is equipped with a matched filter, profile memory bank, and path detection part, constituting a searcher part, and elements constituting a plurality of signal processing systems disposed in a finger part, the elements including

correlators the number of that is the same as that of signal processing systems, memories the number of that is the same as that of them, a diffusion code generation part, and a diffusion modulation part;

the DSP is equipped with a pilot synchronous detection part constituting the searcher part, a plurality of synchronous detection parts constituting a plurality of the signal processing systems, disposed in the finger part, the number of that is the same as that of the synchronous detection parts, a composer part, a physical frame separation part, a decoder part, a coder part, a physical frame multiplexing part, and a transmission frame generation part;

in the searcher part, the matched filter gets a correlation value between a reception signal and a diffusion code while making different from each other the timings with which multiplication between the reception signal and the diffusion code is performed; using this result the pilot synchronous detection part performs synchronous detection of a pilot signal; the profile memory bank stores the obtained result of the correlation value obtained by the matched filter and the synchronous-detected result obtained by the pilot synchronous detection part; and using the stored contents thereof the path detection part detects the path of the reception signal;

in each of the respective signal processing systems disposed in the finger part, for each path detected by the searcher part, correspondingly thereto, the correlator

performs multiplication between the reception signal and the diffusion code to thereby perform inverse diffusion and thereby get a correlation value between the reception signal and the diffusion code, whereby the memory stores that correlation value; and, according to this stored contents the synchronous detection part performs synchronous detection of the post-inverse-diffusion reception signal;

in the composer part, there are composed the synchronous detection results, corresponding to a plurality of paths, input from the finger part and this composed result is output as a final reception signal to the physical frame separation part, while, regarding that composed result, there is detected a signal power/interference power ratio (SIR) and, according to this detected result, there is generated a transmission power control (TPC) bit for controlling a transmission power, the transmission power control bit being output to the transmission frame generation part;

the physical frame separation part performs separation of physical channels with respect to the reception signal input from the composer part and outputs the post-separation reception signal to the decoder part;

the decoder part performs de-interleave processing or error correction decoding with respect to the reception signal input from the physical frame separation part;

the coder part performs interleave processing or error correction coding with respect to the transmission signal and outputs the post-this-processing transmission signal to the

physical frame multiplexing part;

the physical frame multiplexing part performs mapping into physical channels with respect to the transmission signal input from the coder part and outputs the post-mapping transmission signal to the transmission frame generation part;

the transmission frame generation part generates, using the transmission signal input from the physical frame multiplexing part, a transmission frame and outputs the generated transmission frame to the diffusion modulation part and, according to the transmission power control bit input from the composer part, controls the transmission power;

the diffusion code generation part generates a diffusion code and outputs the generated diffusion code to the diffusion modulation part; and

the diffusion modulation part performs diffusion modulation of the transmission frame input from the transmission frame generation part by the use of the diffusion code input from the diffusion code generation part.